Claims

1. An optical recording medium comprising:

a supporting substrate ranging in thickness from 0.6 mm to 2.0 mm and

a light-transmitting layer ranging in thickness from 10 μm to 200 μm, and

between the light-transmitting layer and the supporting substrate, a first dielectric layer, a noble metal oxide layer, a second dielectric layer, a light absorption layer and a third dielectric layer in this arranging order when viewed from the light-transmitting layer side,

wherein the light absorption layer containing as a main component a material that is represented by

$$(Sb_aTe_{1-a})_{1-b}MA_b$$

where MA is an element other than antimony (Sb) and tellurium (Te), $0<a<1$ and $0\leq b<1$, and besides,

that is different from an intermetallic compound represented by

$$\{(GeTe)_c(Sb_2Te_3)_{1-c}\}_dMB_{1-d}$$

where MB is an element other than antimony (Sb), tellurium (Te) and germanium (Ge), c is 1/3, 1/2 or 2/3, and $0<d\leq 1$.

2. An optical recording medium as described in claim 1, wherein the noble metal oxide layer contains platinum oxide ($PtO_x$).

3. An optical recording medium as described in claim 1 or 2, further comprising a reflective layer between the supporting substrate and the third dielectric layer.

4. An optical recording medium as described in any of claims 1 to 3, wherein the noble metal oxide layer has a thickness from 2 nm to 50 nm, the second dielectric layer has a thickness from 5 nm to 100 nm, the light absorption layer has a thickness from 5 nm to 100 nm, and the third dielectric layer has a thickness from 10 nm to 140 nm.

5. A manufacturing method of an optical recording medium, comprising:

a first process of forming on a supporting substrate a reflective layer, a third

dielectric layer, a light absorption layer, a second dielectric layer, a noble metal oxide layer and a first dielectric layer in this order, and

a second process of forming a light-transmitting layer on the first dielectric layer,

wherein the light absorption layer a material as a main component that is represented by

$$(Sb_aTe_{1-a})_{1-b}MA_b$$

where MA is an element other than antimony (Sb) and tellurium (Te), $0<a<1$ and $0\leq b<1$, and besides

that is different from an intermetallic compound represented by

$$\{(GeTe)_c(Sb_2Te_3)_{1-c}\}_dMB_{1-d}$$

where MB is an element other than antimony (Sb), tellurium (Te) and germanium (Ge), c is 1/3, 1/2 or 2/3, and $0<d\leq 1$.

6. A manufacturing method of an optical recording medium as described in claim 5, wherein the first process is carried out according to a vapor deposition method and the second process is carried out according to a spin coating method.

7. A data recording method in which data is recorded on an optical recording medium as described in any of claims 1 to 5 by irradiation with a laser beam from the light-transmitting layer side,

wherein, when the wavelength of the laser beam is represented as $\lambda$ and the numerical aperture of an objective lens for focusing the laser beam is represented as NA, $\lambda$/NA is set at 640 nm or below and a train of recording marks including recording marks $\lambda$/4NA or below in length is recorded.

8. A data reproducing method in which data is reproduced on an optical recording medium as described in any of claims 1 to 5 by irradiation with a laser beam from the light-transmitting layer side,

wherein, when the wavelength of the laser beam is represented as $\lambda$ and the numerical aperture of an objective lens for focusing the laser beam is represented as NA, $\lambda$/NA is set at 640 nm or below and the data is reproduced from a train of recorded marks including the recorded marks $\lambda$/4NA or below in length.